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Docket No.: 1075.1162

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Noriko ITANI

Serial No. 09/826,915

Group Art Unit: 2178

Confirmation No. 6536

Filed: April 6, 2001

Examiner: Stork, Kyle R.

For: STRUCTURED DOCUMENT COMPRESSING APPARATUS AND METHOD, RECORD MEDIUM IN WHICH A STRUCTURED DOCUMENT COMPRESSING PROGRAM IS STORED, STRUCTURED DOCUMENT DECOMPRESSING APPARATUS AND METHOD, RECORD MEDIUM IN WHICH A STRUCTURED DOCUMENT DECOMPRESSING PROGRAM IS STORED, AND STRUCTURED DOCUMENT PROCESSING SYSTEM

APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

(I) Real Party In Interest

The inventor Noriko ITANI assigned all rights in the subject application to FUJITSU LIMITED according to the Assignment executed on March 8, 2001, submitted for recordation on April 6, 2001 and recorded at Reel 011698, Frame 0739-740. Therefore, the real party in interest is FUJITSU LIMITED.

(II) Related Appeals and Interferences

The undersigned attorney, the appellant, and the assignee know of no related appeals or interferences which would be directly affected by or directly affect or have a bearing on the Board's decision in the present appeal.

(III) Status of Claims

Claims 1-27 are currently pending. Claims 1-27 stand finally rejected and are being appealed.

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01 FC:1402

02 FC:1252

510.00 OP
460.00 OP

(IV) Status of Amendments

An Amendment was filed under 37 C.F.R. § 41.33(a) on April 16, 2008 to cancel claims 28-39.

(V) Summary of Claimed Subject Matter**Independent Claim 1**

Independent claim 1 is directed to an "apparatus for compressing a plurality of structured documents having a common data structure" (lines 1-2) and illustrated, for example in Figs. 1, 2, 4, 5, 7, 8, 10 and 13 and the descriptions thereof. The apparatus includes "a tag list obtaining unit obtaining only one tag list, common to said plural structured documents, that lists start markup tags and end markup tags in the order that they appear in the structured documents, by removing element contents from the common data structure" (lines 3-5) and is described, for example, on page 7, lines 1-12, page 8, lines 13-21, page 26, line 20 to page 28, line 25, page 30, lines 2-19 and page 32, lines 5-12. In addition, the apparatus includes "a structured document compressing unit, by replacing all tags in said plural structured documents with a single predetermined delimiter code, generating a plurality of compressed documents comprising element contents and predetermined delimiter codes" (lines 6-8) and is described, for example, on page 7, lines 3-12, page 8, lines 17-21, page 10, lines 7-14, page 26, line 22 to page 28, line 25, page 29, line 26 to page 30, line 19, page 32, lines 13-17, page 33, line 23 to page 34, line 6, page 35, lines 19-26, page 44, lines 2-16, page 57, lines 7-20 and page 62, lines 9-23.

The apparatus of claim 1 finally includes "an outputting unit outputting said single tag list, which is obtained by said tag list obtaining unit, and also said plurality of compressed documents, which are generated individually from said plural structured documents by said structured document compressing unit, in correspondence with one another" (last four lines) and is described, for example, on page 7, lines 7-12, page 8, lines 18-21, page 26, line 23 to page 26, line 14, page 28, lines 18-25, page 30, lines 10-19, page 35, line 23 to page 36, line 25, page 37, lines 14-19, page 38, lines 21-24, page 39, lines 2-13, page 41, lines 16-25, page 44, lines 2-16 and line 27 to page 45, line 21, page 47, lines 6-13, page 50, line 6 to page 51 line 13, page 54, lines 16-27, page 55, lines 3-16, page 67, lines 18-25, page 68, lines 3-9, page 69, lines 13-22, page 70, lines 9-17, page 71, lines 21-24 and page 73, line 24 to page 74, line 1.

Independent Claim 3

Independent claim 3 is directed to "apparatus for compressing a plurality of structured documents having a common data structure" (lines 1-2) and illustrated, for example in Figs. 1, 2, 4, 5, 7, 8, 10 and 13 and the descriptions thereof. The apparatus includes "a tag detecting unit detecting each start markup tag and end markup tag in individual said plurality of structured documents" (lines 3-4) and is described, for example, on page 10, lines 10-14, page 11, lines 8-11, page 12, lines 8-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 3-13, page 39, lines 5-13, page 44, lines 11-16, page 45, line 5 to page 46, line 4, page 48, lines 14-26 and page 50, lines 19-25.

The apparatus further includes "a tag replacement unit replacing said start markup tags and end markup tags, detected by said tag detecting unit, with a single predetermined delimiter code, to translate individual said plurality of structured documents into a compressed document comprising element contents and predetermined delimiter codes" (last four lines) and is described, for example, on page 10, lines 12-14, page 11, lines 10-11, page 12, lines 16-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 5-19, page 39, lines 9-13, page 40, lines 12-15, page 44, lines 10-16, page 45, lines 7-21, page 46, line 11 to page 47, line 6, page 47, lines 8-13, page 51, lines 1-7 and page 52, line 22 to page 53, line 14.

Independent Claim 4

Independent claim 4 is directed to an "apparatus for compressing a structured document" (line 1) and illustrated, for example in Figs. 1, 2, 4, 5, 7, 8, 10 and 13 and the descriptions thereof. The apparatus includes "a subdocument extracting unit extracting a plurality of subdocuments having a common data structure, each of which is a region sandwiched between a start markup tag and an end markup tag that have a predetermined element name, from said structured document" (lines 2-4) and is described, for example, on page 12, lines 12-19, page 14, lines 11-21, page 67, line 22 to page 71, line 15, page 72, lines 20-25 and page 73, lines 10-17.

The apparatus also includes "a tag detecting unit detecting each of said start markup tags and end markup tags in individual said plurality of subdocuments extracted by said subdocument extracting unit" (lines 5-6) and is described, for example, on page 10, lines 10-14, page 11, lines 8-11, page 12, lines 8-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 3-13, page 39, lines 5-13, page 44, lines 11-16, page 45, line 5 to page 46, line 4, page 48, lines 14-26 and page 50, lines 19-25.

The apparatus finally includes "a tag replacement unit replacing each of said start markup tags and end markup tags, detected by said tag detecting unit, with a single predetermined delimiter code, to translate said structured document into a compressed document comprising element contents and predetermined delimiter codes" (last four lines) and is described, for example, on page 10, lines 12-14, page 11, lines 10-11, page 12, lines 16-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 5-19, page 39, lines 9-13, page 40, lines 12-15, page 44, lines 10-16, page 45, lines 7-21, page 46, line 11 to page 47, line 6, page 47, lines 8-13, page 51, lines 1-7 and page 52, line 22 to page 53, line 14.

Independent Claim 11

Independent claim 11 is directed to a " method for compressing a plurality of structured documents having a common data structure using a computer" (lines 1-2) and illustrated, for example in Figs. 1, 2 and 15-17 and the descriptions thereof. The method includes "obtaining only one tag list, common to said plural structured documents, that lists start markup tags and end markup tags in the order that they appear in the structured documents, by removing element contents from the common data structure" (lines 3-5) and is described, for example, on page 7, lines 1-12, page 8, lines 13-21, page 26, line 20 to page 28, line 25, page 30, lines 2-19 and page 32, lines 5-12. In addition, the method includes "replacing each of said start markup tags and end markup tags in individual said plural structured documents that correspond to the tag list in said plural structured documents with a single predetermined delimiter code, to generate a plurality of compressed documents comprising predetermined delimiter codes and element contents" (lines 6-9) and is described, for example, on page 7, lines 3-12, page 8, lines 17-21, page 10, lines 7-14, page 26, line 22 to page 28, line 25, page 29, line 26 to page 30, line 19, page 32, lines 13-17, page 33, line 23 to page 34, line 6, page 35, lines 19-26, page 44, lines 2-16, page 57, lines 7-20 and page 62, lines 9-23.

The method of claim 11 finally includes "outputting the single tag list and the plurality of compressed documents generated from said plural structured documents, in correspondence with one another" (last two lines) and is described, for example, on page 7, lines 7-12, page 8, lines 18-21, page 26, line 23 to page 26, line 14, page 28, lines 18-25, page 30, lines 10-19, page 35, line 23 to page 36, line 25, page 37, lines 14-19, page 38, lines 21-24, page 39, lines 2-13, page 41, lines 16-25, page 44, lines 2-16 and line 27 to page 45, line 21, page 47, lines 6-13, page 50, line 6 to page 51 line 13, page 54, lines 16-27, page 55, lines 3-16, page 67, lines

18-25, page 68, lines 3-9, page 69, lines 13-22, page 70, lines 9-17, page 71, lines 21-24 and page 73, line 24 to page 74, line 1.

Independent Claim 12

Independent claim 12 is directed to a method for "compressing a plurality of structured documents having a common data structure using a computer, where the structured document comprises content start markup tags and end markup tags that are separate from the content and the markup tags structure the content" (lines 1-4) and illustrated, for example in Figs. 1, 2 and 15-17 and the descriptions thereof. The method includes "detecting each start markup tag and end markup tag in individual said plurality of structured documents" (lines 5-6) and is described, for example, on page 10, lines 10-14, page 11, lines 8-11, page 12, lines 8-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 3-13, page 39, lines 5-13, page 44, lines 11-16, page 45, line 5 to page 46, line 4, page 48, lines 14-26 and page 50, lines 19-25.

The method further includes "replacing each start markup tag and end markup tag with a single predetermined delimiter code, to translate individual said plurality of structured documents into a compressed document comprising element contents and predetermined delimiter codes" (last three lines) and is described, for example, on page 10, lines 12-14, page 11, lines 10-11, page 12, lines 16-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 5-19, page 39, lines 9-13, page 40, lines 12-15, page 44, lines 10-16, page 45, lines 7-21, page 46, line 11 to page 47, line 6, page 47, lines 8-13, page 51, lines 1-7 and page 52, line 22 to page 53, line 14.

Independent Claim 13

Independent claim 4 is directed to a "method for compressing a structured document using a computer" (lines 1-2) and illustrated, for example in Figs. 1, 2 and 15-17 and the descriptions thereof. The method includes "extracting a plurality of structure subdocuments having a common data structure, each of which is a region sandwiched between a start markup tag and an end markup tag that have a predetermined element name, from said structured document" (lines 3-5) and is described, for example, on page 12, lines 12-19, page 14, lines 11-21, page 67, line 22 to page 71, line 15, page 72, lines 20-25 and page 73, lines 10-17.

The method also includes "detecting each start markup tag and end markup tag in individual said plurality of subdocuments" (lines 6-7) and is described, for example, on page 10, lines 10-14, page 11, lines 8-11, page 12, lines 8-19, page 35, lines 22-26, page 36, lines 14-25,

page 37, lines 3-13, page 39, lines 5-13, page 44, lines 11-16, page 45, line 5 to page 46, line 4, page 48, lines 14-26 and page 50, lines 19-25.

The method finally includes "replacing each start markup tag and end markup tag with a single predetermined delimiter code, to translate said structured document into a compressed document comprising element contents and predetermined delimiter codes" (last three lines) and is described, for example, on page 10, lines 12-14, page 11, lines 10-11, page 12, lines 16-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 5-19, page 39, lines 9-13, page 40, lines 12-15, page 44, lines 10-16, page 45, lines 7-21, page 46, line 11 to page 47, line 6, page 47, lines 8-13, page 51, lines 1-7 and page 52, line 22 to page 53, line 14.

Independent Claim 14

Independent claim 1 is directed to a computer readable medium that "stores a structured document compressing program for instructing a computer to execute a function of compressing a plurality of structured documents having a common data structure, wherein said structured document compressing program instructs the computer" (lines 1-4) and illustrated, for example in Figs. 15-17 and the descriptions thereof. Claim 14 includes "a tag list obtaining unit obtaining only one tag list, common to said plural structured documents, that lists start markup tags and end markup tags in the order that they appear in the structured documents, by removing element contents from the common data structure" (lines 5-7) and is described, for example, on page 7, lines 1-12, page 8, lines 13-21, page 26, line 20 to page 28, line 25, page 30, lines 2-19 and page 32, lines 5-12. In addition, claim 14 includes "a structured document compressing unit, by replacing each of said start markup tags and end markup tags in individual said plural structured documents that correspond to the tag list in said plural structured documents with a single predetermined delimiter code, generating a plurality of compressed documents comprising said predetermined delimiter and element contents" (lines 8-12) and is described, for example, on page 7, lines 3-12, page 8, lines 17-21, page 10, lines 7-14, page 26, line 22 to page 28, line 25, page 29, line 26 to page 30, line 19, page 32, lines 13-17, page 33, line 23 to page 34, line 6, page 35, lines 19-26, page 44, lines 2-16, page 57, lines 7-20 and page 62, lines 9-23.

Claim 14 finally includes "an outputting unit outputting said single tag list, which is obtained by said tag list obtaining unit, and also said plurality of compressed documents, which are generated individually from said plural structured documents by said structured document compressing unit, in correspondence with one another" (last four lines) and is described, for example, on page 7, lines 7-12, page 8, lines 18-21, page 26, line 23 to page 26, line 14, page 28, lines 18-25, page 30, lines 10-19, page 35, line 23 to page 36, line 25, page 37, lines 14-19,

page 38, lines 21-24, page 39, lines 2-13, page 41, lines 16-25, page 44, lines 2-16 and line 27 to page 45, line 21, page 47, lines 6-13, page 50, line 6 to page 51 line 13, page 54, lines 16-27, page 55, lines 3-16, page 67, lines 18-25, page 68, lines 3-9, page 69, lines 13-22, page 70, lines 9-17, page 71, lines 21-24 and page 73, line 24 to page 74, line 1.

Independent Claim 15

Independent claim 15 is directed to a computer readable medium that "stores a structured document compressing program for instructing a computer to execute a function of compressing a plurality of structured documents having a common data structure, wherein said structured document compressing program instructs the computer" (lines 1-4) and illustrated, for example in Figs. 15-17 and the descriptions thereof. Claim 15 includes "a tag detecting unit detecting each start markup tag and end markup tag in individual said plurality of structured documents" (lines 5-6) and is described, for example, on page 10, lines 10-14, page 11, lines 8-11, page 12, lines 8-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 3-13, page 39, lines 5-13, page 44, lines 11-16, page 45, line 5 to page 46, line 4, page 48, lines 14-26 and page 50, lines 19-25.

Claim 15 further includes "a tag replacement unit replacing each start markup tag and end markup tag, detected by said tag detecting unit, with a single predetermined delimiter code, to translate individual said plurality of structured documents into a compressed document comprising element contents and predetermined delimiter codes" (last four lines) and is described, for example, on page 10, lines 12-14, page 11, lines 10-11, page 12, lines 16-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 5-19, page 39, lines 9-13, page 40, lines 12-15, page 44, lines 10-16, page 45, lines 7-21, page 46, line 11 to page 47, line 6, page 47, lines 8-13, page 51, lines 1-7 and page 52, line 22 to page 53, line 14.

Independent Claim 16

Independent claim 16 is directed to a computer readable medium that "stores a structured document compressing program for instructing a computer to execute a function of compressing a structured document, wherein said structured document compressing program instructs the computer" (lines 1-4) and illustrated, for example in Figs. 15-17 and the descriptions thereof. Claim 16 includes "a subdocument extracting unit extracting a plurality of subdocuments having a common data structure, which is a region sandwiched between a start markup tag and an end markup tag that have a predetermined element name, from said

structured document" (lines 5-7) and is described, for example, on page 12, lines 12-19, page 14, lines 11-21, page 67, line 22 to page 71, line 15, page 72, lines 20-25 and page 73, lines 10-17.

Claim 16 also includes "a tag detecting unit detecting each start markup tag and end markup tag in individual said plurality of subdocuments extracted by said subdocument extracting unit" (lines 8-9) and is described, for example, on page 10, lines 10-14, page 11, lines 8-11, page 12, lines 8-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 3-13, page 39, lines 5-13, page 44, lines 11-16, page 45, line 5 to page 46, line 4, page 48, lines 14-26 and page 50, lines 19-25.

Claim 16 finally includes "a tag replacement unit replacing each start markup tag and end markup tag, detected by said tag detecting unit, with a single predetermined delimiter code, to translate said structured document into a compressed document comprising element contents and predetermined delimiter codes" (last four lines) and is described, for example, on page 10, lines 12-14, page 11, lines 10-11, page 12, lines 16-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 5-19, page 39, lines 9-13, page 40, lines 12-15, page 44, lines 10-16, page 45, lines 7-21, page 46, line 11 to page 47, line 6, page 47, lines 8-13, page 51, lines 1-7 and page 52, line 22 to page 53, line 14.

Independent Claim 17

Independent claim 17 is directed to an "apparatus" (lines 1) and illustrated, for example in Figs. 1, 2, 4, 5, 7, 8, 10 and 13 and the descriptions thereof. The apparatus includes "a plurality of compressed documents generated by replacing each of start markup tags and end markup tags in a plurality of original structured documents having a common data structure with a single predetermined delimiter code and which comprise element contents and predetermined delimiter codes, on the basis of a tag list in which start markup tags and end markup tags in said plural original structured documents are listed in the order of appearance by removing element contents from the common data structure" (lines 2-7) and is described, for example, on page 7, line 4 to page 18, line 13.

The apparatus also includes "a duplicating unit expanding/duplicating a data structure corresponding to said tag list, as a duplicated data structure, on a memory" (lines 8-9) and is described, for example, on page 7, line 19 to page 8, line 1, page 26, line 26 to page 27, line 15, page 29, lines 3-15, page 33, lines 10-13 and page 34, lines 22-26.

The apparatus finally includes "a writing unit writing element contents of each of said compressed documents into predetermined regions of said duplicated data structure extended on said memory, in accordance with a correspondence between a position of a start markup tag or an end markup tag in said duplicated data structure and a position of the predetermined delimiter code in each of said compressed documents" (last five lines) and is described, for example, on page 7, line 22 to page 8, line 1, page 9, lines 16-22, page 26, line 26 to page 27, line 14 and page 29, lines 3-22.

Independent Claim 18

Independent claim 18 is directed to "apparatus" (lines 1) and illustrated, for example in Figs. 1, 2, 4, 5, 7, 8, 10 and 13 and the descriptions thereof. The apparatus includes "a plurality of compressed documents generated by replacing each of start markup tags and end markup tags in a plurality of original structured documents having a common data structure with a single predetermined delimiter code and which comprises element contents and predetermined delimiter codes" (lines 2-5) and is described, for example, on page 7, line 4 to page 18, line 13.

In addition, the apparatus of claim 18 includes "a tag list holding unit holding a tag list in which markup tags in said structured document are listed in the order of appearance by removing element contents from the common data structure" at lines 6-8 and is described, for example, on page 10, line 21 to page 11, line 5 and lines 23-27, page 14, lines 9-22, page 36, lines 6-9, page 37, line 25 to page 38, line, 20, page 40, lines 5-10, page 42, lines 1-8, page 44, line 25 to page 45, line 1, page 47, line 25 to page 48, line 5, page 52, lines 13-20, page 54, line 23 to page 55, line 2, page 57, line 8 to page 59, line 9 and page 76, line 24 to page 77, line 1.

The apparatus also includes "a delimiter code detecting unit detecting each of the predetermined delimiter codes in said compressed document" (lines 9-10) and is described, for example, on page 10, lines 10-14, page 11, lines 8-11, page 12, lines 8-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 3-13, page 39, lines 5-13, page 44, lines 11-16, page 45, line 5 to page 46, line 4, page 48, lines 14-26 and page 50, lines 19-25.

The apparatus further includes "a tag restoring unit replacing the predetermined delimiter code, detected by said delimiter code detecting unit, with a corresponding markup tag on said tag list, in accordance with a correspondence between a position of the markup tag in said tag list and a position of the predetermined delimiter code detected by said delimiter code detecting unit" (last four lines) and is described, for example, on page 10, lines 12-14, page 11, lines 10-11, page 12, lines 16-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 5-19, page

39, lines 9-13, page 40, lines 12-15, page 44, lines 10-16, page 45, lines 7-21, page 46, line 11 to page 47, line 6, page 47, lines 8-13, page 51, lines 1-7 and page 52, line 22 to page 53, line 14.

Independent Claim 19

Independent claim 19 is directed to "apparatus" (lines 1) and illustrated, for example in Figs. 1, 2, 4, 5, 7, 8, 10 and 13 and the descriptions thereof. The apparatus includes "a compressed document generated by replacing each of start markup tags and end markup tags in a plurality of subdocuments having a common data structure, each of which is a region, in an original structured document, sandwiched between a start markup tag and an end markup tag that have a predetermined element name, with a single predetermined delimiter code and which comprises element contents and predetermined delimiter codes" (lines 2-6) and is described, for example, on page 7, line 4 to page 18, line 13.

In addition, the apparatus of claim 19 includes "a tag list holding unit holding a tag list in which markup tags in individual said plurality of subdocuments are listed in the order of appearance by removing element contents from the common data structure" at lines 7-9 and is described, for example, on page 10, line 21 to page 11, line 5 and lines 23-27, page 14, lines 9-22, page 36, lines 6-9, page 37, line 25 to page 38, line, 20, page 40, lines 5-10, page 42, lines 1-8, page 44, line 25 to page 45, line 1, page 47, line 25 to page 48, line 5, page 52, lines 13-20, page 54, line 23 to page 55, line 2, page 57, line 8 to page 59, line 9 and page 76, line 24 to page 77, line 1.

The apparatus includes "a subdocument extracting unit extracting individual said plurality of subdocuments from said compressed document" (lines 10-11) and is described, for example, on page 12, lines 12-19, page 14, lines 11-21, page 67, line 22 to page 71, line 15, page 72, lines 20-25 and page 73, lines 10-17.

The apparatus includes "a delimiter code detecting unit detecting each of the predetermined delimiter codes in individual said plurality of subdocuments extracted by said subdocument extracting unit" (lines 12-13) and is described, for example, on page 10, lines 10-14, page 11, lines 8-11, page 12, lines 8-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 3-13, page 39, lines 5-13, page 44, lines 11-16, page 45, line 5 to page 46, line 4, page 48, lines 14-26 and page 50, lines 19-25.

The apparatus finally includes "a tag restoring unit replacing the predetermined delimiter code, detected by said delimiter code detecting unit, with a corresponding start markup tag or

end markup tag on said tag list, in accordance with a correspondence between a position of the start markup tag or the end markup tag in said tag list and a position of the predetermined delimiter code detected by said delimiter code detecting unit" (last five lines) and is described, for example, on page 10, lines 12-14, page 11, lines 10-11, page 12, lines 16-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 5-19, page 39, lines 9-13, page 40, lines 12-15, page 44, lines 10-16, page 45, lines 7-21, page 46, line 11 to page 47, line 6, page 47, lines 8-13, page 51, lines 1-7 and page 52, line 22 to page 53, line 14.

Independent claim 22

Independent claim 22 is directed to a "method" (lines 1) and illustrated, for example in Figs. 1, 2 and 15-17 and the descriptions thereof. The method includes "generating a plurality of compressed documents by replacing each of start markup tags and end markup tags in a plurality of original structured documents having a common data structure with a single predetermined delimiter code and which comprise element contents and predetermined delimiter codes, on the basis of a tag list in which start markup tags and end markup tags in said plural original structured documents are listed in the order of appearance by removing element contents from the common data structure" (lines 2-7) and is described, for example, on page 7, line 4 to page 18, line 13.

The method also includes "expanding/duplicating a data structure corresponding to said tag list, as a duplicated data structure, on a memory" (lines 8-9) and is described, for example, on page 7, line 19 to page 8, line 1, page 26, line 26 to page 27, line 15, page 29, lines 3-15, page 33, lines 10-13 and page 34, lines 22-26.

The method finally includes "writing element contents of each of said compressed documents into predetermined regions of said duplicated data structure extended on said memory, in accordance with a correspondence between a position of a start markup tag or an end markup tag in said duplicated data structure and a position of the predetermined delimiter code in each of said compressed documents" (last five lines) and is described, for example, on page 7, line 22 to page 8, line 1, page 9, lines 16-22, page 26, line 26 to page 27, line 14 and page 29, lines 3-22.

Independent claim 23

Independent claim 23 is directed to a "method" (line 1) and illustrated, for example in Figs. 1, 2 and 15-17 and the descriptions thereof. The method includes "generating a plurality of compressed documents by replacing each of start markup tags and end markup tags in a

plurality of original structured documents having a common data structure with a single predetermined delimiter code and which comprises element contents and predetermined delimiter codes" (lines 2-5) and is described, for example, on page 7, line 4 to page 18, line 13.

In addition, the method of claim 23 includes "holding a tag list in which start markup tags and end markup tags in said structured document are listed in the order of appearance by removing element contents from the common data structure" at lines 6-8 and is described, for example, on page 10, line 21 to page 11, line 5 and lines 23-27, page 14, lines 9-22, page 36, lines 6-9, page 37, line 25 to page 38, line, 20, page 40, lines 5-10, page 42, lines 1-8, page 44, line 25 to page 45, line 1, page 47, line 25 to page 48, line 5, page 52, lines 13-20, page 54, line 23 to page 55, line 2, page 57, line 8 to page 59, line 9 and page 76, line 24 to page 77, line 1.

The method also includes "detecting each of the predetermined delimiter codes in individual said plurality of compressed documents" (lines 9-10) and is described, for example, on page 10, lines 10-14, page 11, lines 8-11, page 12, lines 8-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 3-13, page 39, lines 5-13, page 44, lines 11-16, page 45, line 5 to page 46, line 4, page 48, lines 14-26 and page 50, lines 19-25.

The method further includes "replacing the detected predetermined delimiter code with a corresponding start markup tag or end markup tag on said tag list, in accordance with a correspondence between a position of the detected predetermined delimiter code and a position of the start markup tag or the end markup tag in said tag list" (last four lines) and is described, for example, on page 10, lines 12-14, page 11, lines 10-11, page 12, lines 16-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 5-19, page 39, lines 9-13, page 40, lines 12-15, page 44, lines 10-16, page 45, lines 7-21, page 46, line 11 to page 47, line 6, page 47, lines 8-13, page 51, lines 1-7 and page 52, line 22 to page 53, line 14.

Independent claim 24

Independent claim 24 is directed to a "method" (line 1) and illustrated, for example in Figs. 1, 2 and 15-17 and the descriptions thereof. The method includes "generating a compressed document by replacing each of start markup tags and end markup tags in a plurality of subdocuments having a common data structure, each of which is a region, in an original structured document, sandwiched between a start markup tag and an end markup tag that have a predetermined element name, with a single predetermined delimiter code and which comprises element contents and predetermined delimiter codes" (lines 2-6) and is described, for example, on page 7, line 4 to page 18, line 13.

In addition, the method of claim 24 includes "holding a tag list in which start markup tags and end markup tags in individual said plurality of subdocuments are listed in the order of appearance by removing element contents from the common data structure" at lines 7-9 and is described, for example, on page 10, line 21 to page 11, line 5 and lines 23-27, page 14, lines 9-22, page 36, lines 6-9, page 37, line 25 to page 38, line, 20, page 40, lines 5-10, page 42, lines 1-8, page 44, line 25 to page 45, line 1, page 47, line 25 to page 48, line 5, page 52, lines 13-20, page 54, line 23 to page 55, line 2, page 57, line 8 to page 59, line 9 and page 76, line 24 to page 77, line 1.

The method further includes "extracting individual said plurality of subdocuments from said compressed document" (line 10) and is described, for example, on page 12, lines 12-19, page 14, lines 11-21, page 67, line 22 to page 71, line 15, page 72, lines 20-25 and page 73, lines 10-17.

The method finally includes "replacing the detected predetermined delimiter code with a corresponding start markup tag or end markup tag on said tag list, in accordance with a correspondence between a position of the detected predetermined delimiter code and a position of the start markup tag or the end markup tag in said tag list" (last four lines) and is described, for example, on page 10, lines 12-14, page 11, lines 10-11, page 12, lines 16-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 5-19, page 39, lines 9-13, page 40, lines 12-15, page 44, lines 10-16, page 45, lines 7-21, page 46, line 11 to page 47, line 6, page 47, lines 8-13, page 51, lines 1-7 and page 52, line 22 to page 53, line 14.

Independent claim 25

Independent claim 25 is directed to a "computer readable record medium encoded with a method instructing a computer to perform a method" (lines 1-2) and illustrated, for example in Figs. 15-17 and the descriptions thereof. Claim 25 includes "generating a plurality of compressed documents by replacing each of start markup tags and end markup tags, in a plurality of original structured documents having a common data structure, with a single predetermined delimiter code and which comprise element contents and predetermined delimiter codes, on the basis of a tag list in which start markup tags and end markup tags in said plural structured documents are listed in the order of appearance by removing element contents from the common data structure" (lines 3-8) and is described, for example, on page 7, line 4 to page 18, line 13.

Claim 25 also includes "a duplicating unit expanding/duplicating a data structure corresponding to said tag list, as a duplicated data structure, on a memory" (lines 9-10) and is

described, for example, on page 7, line 19 to page 8, line 1, page 26, line 26 to page 27, line 15, page 29, lines 3-15, page 33, lines 10-13 and page 34, lines 22-26.

Claim 25 finally includes "a writing unit writing element contents of each of said compressed documents into predetermined regions of said duplicated data structure extended on said memory, in accordance with a correspondence between a position of a start markup tag or an end markup tag in said duplicated data structure and a position of the predetermined delimiter code in each of said compressed documents" (last five lines) and is described, for example, on page 7, line 22 to page 8, line 1, page 9, lines 16-22, page 26, line 26 to page 27, line 14 and page 29, lines 3-22.

Independent claim 26

Independent claim 26 is directed to a "computer readable record medium encode with a method instructing a computer to perform a method" (lines 1-2) and illustrated, for example in Figs. 15-17 and the descriptions thereof. Claim 26 includes "generating a plurality of compressed documents by replacing each of start markup tags and end markup tags, in a plurality of original structured documents having a common data structure, with a single predetermined delimiter code and which comprises element contents and predetermined delimiter codes" (lines 3-6) and is described, for example, on page 7, line 4 to page 18, line 13.

Claim 26 also includes "a delimiter code detecting unit detecting each of the predetermined delimiter codes in individual said plurality of compressed documents" (lines 7-8) and is described, for example, on page 10, lines 10-14, page 11, lines 8-11, page 12, lines 8-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 3-13, page 39, lines 5-13, page 44, lines 11-16, page 45, line 5 to page 46, line 4, page 48, lines 14-26 and page 50, lines 19-25.

Claim 26 further includes "a tag restoring unit replacing the predetermined delimiter code, detected by said delimiter code detecting unit, with a corresponding start markup tag or end markup tag on a tag list in which start markup tags and end markup tags in individual said plurality of structured documents are listed in the order of appearance by removing element contents from the common data structure, in accordance with a correspondence between a position of the start markup tag or the end markup tag in said tag list and a position of the predetermined delimiter code detected by said delimiter code detecting unit" (last seven lines) and is described, for example, on page 10, lines 12-14, page 11, lines 10-11, page 12, lines 16-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 5-19, page 39, lines 9-13, page

40, lines 12-15, page 44, lines 10-16, page 45, lines 7-21, page 46, line 11 to page 47, line 6, page 47, lines 8-13, page 51, lines 1-7 and page 52, line 22 to page 53, line 14.

Independent claim 27

Independent claim 27 is directed to a "computer readable record medium encode with a method instructing a computer to perform a method" (lines 1-2) and illustrated, for example in Figs. 15-17 and the descriptions thereof. Claim 27 includes "generating a compressed document by replacing each of start markup tags and end markup tags in a plurality of subdocuments having a common data structure, each of which is a region, in an original structured document, sandwiched between a start markup tag and an end markup tag that have a predetermined element name, with a single predetermined delimiter code and which comprises element contents and predetermined delimiter codes" (lines 3-7) and is described, for example, on page 7, line 4 to page 18, line 13

Claim 27 includes "a subdocument extracting unit extracting individual said plurality of subdocuments from said compressed document" (lines 8-9) and is described, for example, on page 12, lines 12-19, page 14, lines 11-21, page 67, line 22 to page 71, line 15, page 72, lines 20-25 and page 73, lines 10-17.

Claim 27 further includes "a delimiter code detecting unit detecting each of the predetermined delimiter codes in individual said plurality of subdocuments extracted by said subdocument extracting unit" (lines 10-11) and is described, for example, on page 10, lines 10-14, page 11, lines 8-11, page 12, lines 8-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 3-13, page 39, lines 5-13, page 44, lines 11-16, page 45, line 5 to page 46, line 4, page 48, lines 14-26 and page 50, lines 19-25.

Claim 27 finally includes "a tag restoring unit replacing the predetermined delimiter code, detected by said delimiter code detecting unit, with a corresponding start markup tag or end markup tag on a tag list in which start markup tags and end markup tags in said subdocument are listed in the order of appearance by removing element contents from the common data structure, in accordance with a correspondence between a position of the start markup tag or the end markup tag in said tag list and a position of the predetermined delimiter code detected by said delimiter code detecting unit." (last seven lines) and is described, for example, on page 10, lines 12-14, page 11, lines 10-11, page 12, lines 16-19, page 35, lines 22-26, page 36, lines 14-25, page 37, lines 5-19, page 39, lines 9-13, page 40, lines 12-15, page 44, lines 10-16, page

45, lines 7-21, page 46, line 11 to page 47, line 6, page 47, lines 8-13, page 51, lines 1-7 and page 52, line 22 to page 53, line 14.

(VI) Grounds of Rejection to be Reviewed on Appeal

A. Claims 1-6, 11-30 and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,635,088 issued to Hind et al. (hereinafter "Hind") in view of U.S. Patent 7,043,686 issued to Maruyama et al. (hereinafter "Maruyama").

B. Claim 7-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hind and Maruyama, in further view of U.S. Patent 5,999,929 issued to Goodman.

(VII) Argument

In the final Office Action mailed July 16, 2007, the following issues were raised by the Examiner, but are not subject to the present appeal before the Board of Patent Appeals and Interferences (hereinafter, the "Board"), because claims 28-29 were cancelled by the Amendment filed April 16, 2008.

In item 5, starting on page 10 of the final Office Action, claims 28-30 and 39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hind in view of Maruyama.

In item 6, on page 12 of the final Office Action, claims 31-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hind and Maruyama, in further view of U.S. Patent 5,572,731 issued to Morel et al.

Item 7, on page 13 of the final Office Action, claims 33, 34, 37 and 38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hind and Maruyama, in further view of U.S. Patent 6,507,874 issued to Tuniman et al.

Regarding the rejections presented for appeal before the Board, the following arguments are respectfully submitted.

Rejection of Claims 1-6, 11-27 under 35 U.S.C. § 103(a)

Claims 1-6, 11-30 and 39 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hind in view of Maruyama.

1. Relevant Law

To establish a *prima facie* case of obviousness, one of the three basic criteria that must be met is that the reference must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the references, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143 - § 2143.03 for decisions pertinent to each of these criteria.

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). See MPEP § 2144 - § 2144.09 for examples of reasoning supporting obviousness rejections.

2. Application of the Relevant Law

As stated previously, claims 1-6 and 11-27 were rejected under 35 U.S.C. § 103(a) as unpatentable over Hind in view of Maruyama. Hind relates to a method and system for reducing Extensible Markup Language (XML) and Document Type Definition (DTD) document file sizes using tags, where the size of tags in either or both of XML and DTD files is reduced. In particular, Hind defines the four subprocesses that parse a file encoded in a derivative of Standard Generalized Markup Language (SGML) as

a subprocess for reading the encoded file; a subprocess for locating each of a plurality of tags in the encoded file; a subprocess for substituting a unique short tag for each unique one of the located tags in the encoded file; and a subprocess for storing a correspondence between each of the short tags and the located tag for which it was substituted

at column 4, lines 25-31. In other words, a tag compression technique is described that: (1) successively generates short names ("short tags") for original tag names ("located tags") appearing in a document file, (2) substitutes the short names for the original tag names, and (3) retains relationships between the original tag names and the short names in a table. Thus, it is clear from Hind that two lists of tags are used: a list of "unique short tags" and a list of "located tags in the encoded file" and "correspondence between each of the short tags and the located tag" is stored.

Independent claim 1, by contrast, recites "a tag list obtaining unit obtaining only one tag

list, common to said plural structured documents, that lists start markup tags and end markup tags in the order that they appear in the structured documents, by removing element contents from the common data structure" at lines 3-5. On its face, claim 1 compresses documents by obtaining and storing only one tag list and not a plurality of tag lists (*i.e.* "short tags" and "located tags" as disclosed in Hind). Therefore, it is submitted that Hind does not disclose "a tag list obtaining unit for obtaining a single tag list" as recited in claim 1.

Claim 1 also recites "a structured document compressing unit, by replacing all tags in said plural structured documents with *a single predetermined delimiter code*, generating a plurality of compressed documents comprising element contents and predetermined delimiter codes" (lines 8-9, emphasis added). As indicated by the emphasis, only one predetermined delimiter code is used to replace different tags that appear in the structured documents. On the other hand, Hind discloses "storing a correspondence between each of the short tags and the located tag for which it was substituted" (column 4, lines 50-52). The apparatus recited in claim 1 cannot maintain such a correspondence, because only one predetermined delimiter code is used for "all tags in ... plural structured documents" (claim 1, lines 8-9). It is submitted that Hind does not teach or suggest substitution using only "a single predetermined delimiter code" and without mapping a relationship between short tags and located tags.

Claim 1 finally recites "an outputting unit outputting said single tag list, which is obtained by said tag list obtaining unit, and also said plurality of compressed documents, which are generated individually from said plural structured documents by said structured document compressing unit, in correspondence with one another" in the last four lines. As stated above, Hind does not output a "single tag list" but rather outputs at least a short tag list and a located tag list.

Therefore, claim 1 distinguishes over Hind, at least because Hind does not "replac[e] all tags in said plural structured documents with a single predetermined delimiter code" as recited in claim 1.

Nothing has been cited or found in Maruyama that teaches or suggests modifying the method disclosed by Hind to produce a single list of tags or perform substitution without relationship mapping. Therefore, it is submitted that Hind and Maruyama, individually or combined, do not teach or suggest all the features recited in claim 1.

Independent claims 4, 11-19 and 22-27 each recite "replacing each ... start markup tags and end markup tags ... with a single predetermined delimiter code" (*e.g.*, claim 4, lines 7-8).

For the reasons discussed above, it is submitted that claims 4, 11-19 and 22-27 patentably distinguish over Hind and Maruyama individually or in combination.

Independent claim 3 recites "replacing said start markup tags and end markup tags ... with a single predetermined delimiter code" at lines 5-6. It is submitted, for the reasons discussed above, that claim 3 patentably distinguishes over Hind and Maruyama individually or in combination.

Rejection of Claims 7-10 under 35 U.S.C. § 103(a)

Claims 7-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hind and Maruyama in view of Goodman. Claims 7-10 depend from independent claim 3 and thus, patentably distinguish over Hind and Maruyama for the reasons discussed above with respect to claim 3. Nothing was cited or found in Goodman suggesting modification of Hind and Maruyama to overcome the deficiencies discussed above. Therefore, it is submitted that claims 7-10 patentably distinguish over Hind, Maruyama and Goodman for the reasons discussed above.

Summary of Arguments

For the reasons set forth above and in the Amendment filed May 29, 2007, it is submitted that claims 39, 49, 42-45, 47-49 and 55-57 comply with the requirements of 35 U.S.C. § 251 and that claims 1-57 comply with the written description requirements of 35 U.S.C. § 112, first paragraph. Thus, it is respectfully submitted that the Examiner's final rejection of the claims is without support and, therefore, erroneous. Accordingly, the Board of Patent Appeals and Interferences is respectfully urged to so find and to reverse the Examiner's final rejection.

Please charge any required fee to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date:

April 17, 2008

By:

David E. Moore
David E. Moore
Registration No. 59,047

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501

VIII. Claims Appendix

1. An apparatus for compressing a plurality of structured documents having a common data structure, said apparatus comprising:

a tag list obtaining unit obtaining only one tag list, common to said plural structured documents, that lists start markup tags and end markup tags in the order that they appear in the structured documents, by removing element contents from the common data structure;

a structured document compressing unit, by replacing all tags in said plural structured documents with a single predetermined delimiter code, generating a plurality of compressed documents comprising element contents and predetermined delimiter codes; and

an outputting unit outputting said single tag list, which is obtained by said tag list obtaining unit, and also said plurality of compressed documents, which are generated individually from said plural structured documents by said structured document compressing unit, in correspondence with one another.

2. A structured document compressing apparatus according to claim 1, wherein said structured document compressing unit further comprises:

a tag detecting unit detecting each start markup tag and end markup tag in individual said structured documents; and

a tag replacement unit replacing each start markup tag and end markup tag, detected by said tag detecting unit, with said predetermined delimiter code.

3. An apparatus for compressing a plurality of structured documents having a common data structure, said apparatus comprising:

a tag detecting unit detecting each start markup tag and end markup tag in individual said plurality of structured documents; and

a tag replacement unit replacing said start markup tags and end markup tags, detected by said tag detecting unit, with a single predetermined delimiter code, to translate individual said plurality of structured documents into a compressed document comprising element contents and predetermined delimiter codes.

4. An apparatus for compressing a structured document, said apparatus comprising:

a subdocument extracting unit extracting a plurality of subdocuments having a common data structure, each of which is a region sandwiched between a start markup tag and an end

markup tag that have a predetermined element name, from said structured document;

a tag detecting unit detecting each of said start markup tags and end markup tags in individual said plurality of subdocuments extracted by said subdocument extracting unit; and

a tag replacement unit replacing each of said start markup tags and end markup tags, detected by said tag detecting unit, with a single predetermined delimiter code, to translate said structured document into a compressed document comprising element contents and predetermined delimiter codes.

5. A structured document compressing apparatus according to claim 3, further comprising:

an attribute-bearing-tag discriminating unit discriminating whether or not said markup tag detected by said tag detecting unit is an attribute-bearing markup tag, which has an attribute value; and

an attribute-bearing-tag replacement unit replacing said attribute-bearing markup tag, discriminated by said attribute-bearing-tag discriminating unit, with a set of the attribute value and a single predetermined delimiter code.

6. A structured document compressing apparatus according to claim 4, further comprising:

an attribute-bearing-tag discriminating unit discriminating whether or not said markup tag detected by said tag detecting unit is an attribute-bearing markup tag, which has an attribute value; and

an attribute-bearing-tag replacement unit replacing said attribute-bearing markup tag, discriminated by said attribute-bearing-tag discriminating unit, with a set of the attribute value and a single predetermined delimiter code.

7. A structured document compressing apparatus according to claim 3, further comprising:

a tag list holding unit holding a tag list in which start markup tags and end markup tags are listed in a predetermined order for definition of a predetermined data structure;

a tag rearranging unit rearranging start markup tags and end markup tags in individual said plurality of structured documents before compression, in the predetermined order according to the tag list held in said tag list holding unit; and

an omitted-tag supplementing unit supplementing a start markup tag and an end markup

tag omitted in said structured document according to said tag list held in said tag list holding unit.

8. A structured document compressing apparatus according to claim 4, further comprising:

a tag list holding unit holding a tag list in which start markup tags and end markup tags are listed in a predetermined order for definition of a predetermined data structure;

a tag rearranging unit rearranging start markup tags and end markup tags in said structured document before compressed, in the predetermined order according to the tag list held in said tag list holding unit; and

an omitted-tag supplementing unit supplementing a start markup tag and an end markup tag omitted in said structured document according to said tag list held in said tag list holding unit.

9. A structured document compressing apparatus according to claim 5, further comprising:

a tag/attribute list holding unit holding a tag/attribute list in which start markup tags, end markup tags and an attribute name are listed in a predetermined order for the definition of a predetermined data structure;

a tag/attribute rearranging unit rearranging start markup tags, end markup tags and an attribute in individual said plurality of structured documents to be compressed, in the predetermined order according to the tag/attribute list held in said tag/attribute list holding unit; and

an omitted tag/attribute supplementing unit supplementing a start markup tag and an end markup tag and/or an attribute omitted in individual said plurality of structured documents according to the tag/attribute list held in said tag/attribute list holding unit.

10. A structured document compressing apparatus according to claim 6, further comprising:

a tag/attribute list holding unit holding a tag/attribute list in which start markup tags, end markup tags and an attribute name are listed in a predetermined order for the definition of a predetermined data structure;

a tag/attribute rearranging unit rearranging start markup tags, end markup tags and an attribute in said structured document to be compressed, in the predetermined order according to the tag/attribute list held in said tag/attribute list holding unit; and

an omitted tag/attribute supplementing unit supplementing a start markup tag and an end markup tag and/or an attribute omitted in said structured document according to the tag/attribute list held in said tag/attribute list holding unit.

11. A method for compressing a plurality of structured documents having a common data structure using a computer, said method comprising:

obtaining only one tag list, common to said plural structured documents, that lists start markup tags and end markup tags in the order that they appear in the structured documents, by removing element contents from the common data structure;

replacing each of said start markup tags and end markup tags in individual said plural structured documents that correspond to the tag list in said plural structured documents with a single predetermined delimiter code, to generate a plurality of compressed documents comprising predetermined delimiter codes and element contents; and

outputting the single tag list and the plurality of compressed documents generated from said plural structured documents, in correspondence with one another.

12. A method for compressing a plurality of structured documents having a common data structure using a computer, where the structured document comprises content start markup tags and end markup tags that are separate from the content and the markup tags structure the content, said method comprising:

detecting each start markup tag and end markup tag in individual said plurality of structured documents; and

replacing each start markup tag and end markup tag with a single predetermined delimiter code, to translate individual said plurality of structured documents into a compressed document comprising element contents and predetermined delimiter codes.

13. A method for compressing a structured document using a computer, said method comprising:

extracting a plurality of structure subdocuments having a common data structure, each of which is a region sandwiched between a start markup tag and an end markup tag that have a predetermined element name, from said structured document;

detecting each start markup tag and end markup tag in individual said plurality of subdocuments; and

replacing each start markup tag and end markup tag with a single predetermined

delimiter code, to translate said structured document into a compressed document comprising element contents and predetermined delimiter codes.

14. A computer readable record medium which stores a structured document compressing program for instructing a computer to execute a function of compressing a plurality of structured documents having a common data structure, wherein said structured document compressing program instructs the computer to function as:

a tag list obtaining unit obtaining only one tag list, common to said plural structured documents, that lists start markup tags and end markup tags in the order that they appear in the structured documents, by removing element contents from the common data structure;

a structured document compressing unit, by replacing each of said start markup tags and end markup tags in individual said plural structured documents that correspond to the tag list in said plural structured documents with a single predetermined delimiter code, generating a plurality of compressed documents comprising said predetermined delimiter and element contents; and

an outputting unit outputting said single tag list, which is obtained by said tag list obtaining unit, and also said plurality of compressed documents, which are generated individually from said plural structured documents by said structured document compressing unit, in correspondence with one another.

15. A computer readable record medium which stores a structured document compressing program for instructing a computer to execute a function of compressing a plurality of structured documents having a common data structure, wherein said structured document compressing program instructs the computer to function as:

a tag detecting unit detecting each start markup tag and end markup tag in individual said plurality of structured documents; and

a tag replacement unit replacing each start markup tag and end markup tag, detected by said tag detecting unit, with a single predetermined delimiter code, to translate individual said plurality of structured documents into a compressed document comprising element contents and predetermined delimiter codes.

16. A computer readable record medium which stores a structured document compressing program for instructing a computer to execute a function of compressing a structured document, wherein said structured document compressing program instructs the

computer to function as:

a subdocument extracting unit extracting a plurality of subdocuments having a common data structure, which is a region sandwiched between a start markup tag and an end markup tag that have a predetermined element name, from said structured document;

a tag detecting unit detecting each start markup tag and end markup tag in individual said plurality of subdocuments extracted by said subdocument extracting unit; and

a tag replacement unit replacing each start markup tag and end markup tag, detected by said tag detecting unit, with a single predetermined delimiter code, to translate said structured document into a compressed document comprising element contents and predetermined delimiter codes.

17. An apparatus comprising:

a plurality of compressed documents generated by replacing each of start markup tags and end markup tags in a plurality of original structured documents having a common data structure with a single predetermined delimiter code and which comprise element contents and predetermined delimiter codes, on the basis of a tag list in which start markup tags and end markup tags in said plural original structured documents are listed in the order of appearance by removing element contents from the common data structure;

a duplicating unit expanding/duplicating a data structure corresponding to said tag list, as a duplicated data structure, on a memory; and

a writing unit writing element contents of each of said compressed documents into predetermined regions of said duplicated data structure extended on said memory, in accordance with a correspondence between a position of a start markup tag or an end markup tag in said duplicated data structure and a position of the predetermined delimiter code in each of said compressed documents.

18. An apparatus comprising:

a plurality of compressed documents generated by replacing each of start markup tags and end markup tags in a plurality of original structured documents having a common data structure with a single predetermined delimiter code and which comprises element contents and predetermined delimiter codes;

a tag list holding unit holding a tag list in which markup tags in said structured document are listed in the order of appearance by removing element contents from the common data structure;

a delimiter code detecting unit detecting each of the predetermined delimiter codes in said compressed document; and

a tag restoring unit replacing the predetermined delimiter code, detected by said delimiter code detecting unit, with a corresponding markup tag on said tag list, in accordance with a correspondence between a position of the markup tag in said tag list and a position of the predetermined delimiter code detected by said delimiter code detecting unit.

19. An apparatus, comprising:

a compressed document generated by replacing each of start markup tags and end markup tags in a plurality of subdocuments having a common data structure, each of which is a region, in an original structured document, sandwiched between a start markup tag and an end markup tag that have a predetermined element name, with a single predetermined delimiter code and which comprises element contents and predetermined delimiter codes;

a tag list holding unit holding a tag list in which markup tags in individual said plurality of subdocuments are listed in the order of appearance by removing element contents from the common data structure;

a subdocument extracting unit extracting individual said plurality of subdocuments from said compressed document;

a delimiter code detecting unit detecting each of the predetermined delimiter codes in individual said plurality of subdocuments extracted by said subdocument extracting unit; and

a tag restoring unit replacing the predetermined delimiter code, detected by said delimiter code detecting unit, with a corresponding start markup tag or end markup tag on said tag list, in accordance with a correspondence between a position of the start markup tag or the end markup tag in said tag list and a position of the predetermined delimiter code detected by said delimiter code detecting unit.

20. A structured document decompressing apparatus according to claim 18, wherein if an attribute inside an attribute-bearing markup tag in individual said plurality of original structured documents is replaced with a set of an attribute value and a predetermined delimiter code in individual said plurality of compressed documents, said apparatus further comprises:

an attribute list holding unit holding an attribute list in which attribute names in individual said plurality of compressed documents are listed in the order of appearance;

an attribute-bearing-tag discriminating unit discriminating whether or not a given markup tag to be restored by said tag restoring unit is an attribute-bearing markup tag; and

an attribute-bearing-tag restoring unit restoring said attribute-bearing markup tag discriminated by said attribute-bearing-tag discriminating unit, in accordance with a correspondence between an attribute value for said attribute-bearing markup tag and an attribute name in said attribute list.

21. A structured document decompressing apparatus according to claim 19, wherein if an attribute inside an attribute-bearing markup tag in said original structured document is replaced with a set of an attribute value and a predetermined delimiter code in said compressed document, said apparatus further comprises:

an attribute list holding unit holding an attribute list in which attribute names in said compressed document are listed in the order of appearance;

an attribute-bearing-tag discriminating unit discriminating whether or not a given markup tag to be restored by said tag restoring unit is an attribute-bearing markup tag; and

an attribute-bearing-tag restoring unit restoring said attribute-bearing markup tag discriminated by said attribute-bearing-tag discriminating unit, in accordance with a correspondence between an attribute value for said attribute-bearing markup tag and an attribute name in said attribute list.

22. A method comprising:

generating a plurality of compressed documents by replacing each of start markup tags and end markup tags in a plurality of original structured documents having a common data structure with a single predetermined delimiter code and which comprise element contents and predetermined delimiter codes, on the basis of a tag list in which start markup tags and end markup tags in said plural original structured documents are listed in the order of appearance by removing element contents from the common data structure;

expanding/duplicating a data structure corresponding to said tag list, as a duplicated data structure, on a memory; and

writing element contents of each of said compressed documents into predetermined regions of said duplicated data structure extended on said memory, in accordance with a correspondence between a position of a start markup tag or an end markup tag in said duplicated data structure and a position of the predetermined delimiter code in each of said compressed documents.

23. A method comprising:

generating a plurality of compressed documents by replacing each of start markup tags and end markup tags in a plurality of original structured documents having a common data structure with a single predetermined delimiter code and which comprises element contents and predetermined delimiter codes;

holding a tag list in which start markup tags and end markup tags in said structured document are listed in the order of appearance by removing element contents from the common data structure;

detecting each of the predetermined delimiter codes in individual said plurality of compressed documents; and

replacing the detected predetermined delimiter code with a corresponding start markup tag or end markup tag on said tag list, in accordance with a correspondence between a position of the detected predetermined delimiter code and a position of the start markup tag or the end markup tag in said tag list.

24. A method comprising:

generating a compressed document by replacing each of start markup tags and end markup tags in a plurality of subdocuments having a common data structure, each of which is a region, in an original structured document, sandwiched between a start markup tag and an end markup tag that have a predetermined element name, with a single predetermined delimiter code and which comprises element contents and predetermined delimiter codes;

holding a tag list in which start markup tags and end markup tags in individual said plurality of subdocuments are listed in the order of appearance by removing element contents from the common data structure;

extracting individual said plurality of subdocuments from said compressed document;

detecting each of the predetermined delimiter codes in individual said extracted plurality of subdocuments; and

replacing the detected predetermined delimiter code with a corresponding start markup tag or end markup tag on said tag list, in accordance with a correspondence between a position of the detected predetermined delimiter code and a position of the start markup tag or the end markup tag in said tag list.

25. A computer readable record medium encoded with a method instructing a computer to perform a method comprising:

generating a plurality of compressed documents by replacing each of start markup tags

and end markup tags, in a plurality of original structured documents having a common data structure, with a single predetermined delimiter code and which comprise element contents and predetermined delimiter codes, on the basis of a tag list in which start markup tags and end markup tags in said plural structured documents are listed in the order of appearance by removing element contents from the common data structure;

a duplicating unit expanding/duplicating a data structure corresponding to said tag list, as a duplicated data structure, on a memory; and

a writing unit writing element contents of each of said compressed documents into predetermined regions of said duplicated data structure extended on said memory, in accordance with a correspondence between a position of a start markup tag or an end markup tag in said duplicated data structure and a position of the predetermined delimiter code in each of said compressed documents.

26. A computer readable record medium encode with a method instructing a computer to perform a method comprising:

generating a plurality of compressed documents by replacing each of start markup tags and end markup tags, in a plurality of original structured documents having a common data structure, with a single predetermined delimiter code and which comprises element contents and predetermined delimiter codes;

a delimiter code detecting unit detecting each of the predetermined delimiter codes in individual said plurality of compressed documents; and

a tag restoring unit replacing the predetermined delimiter code, detected by said delimiter code detecting unit, with a corresponding start markup tag or end markup tag on a tag list in which start markup tags and end markup tags in individual said plurality of structured documents are listed in the order of appearance by removing element contents from the common data structure, in accordance with a correspondence between a position of the start markup tag or the end markup tag in said tag list and a position of the predetermined delimiter code detected by said delimiter code detecting unit.

27. A computer readable record medium encoded with a method instructing a computer to perform a method comprising:

generating a compressed document by replacing each of start markup tags and end markup tags in a plurality of subdocuments having a common data structure, each of which is a region, in an original structured document, sandwiched between a start markup tag and an end

markup tag that have a predetermined element name, with a single predetermined delimiter code and which comprises element contents and predetermined delimiter codes;

a subdocument extracting unit extracting individual said plurality of subdocuments from said compressed document;

a delimiter code detecting unit detecting each of the predetermined delimiter codes in individual said plurality of subdocuments extracted by said subdocument extracting unit; and

a tag restoring unit replacing the predetermined delimiter code, detected by said delimiter code detecting unit, with a corresponding start markup tag or end markup tag on a tag list in which start markup tags and end markup tags in said subdocument are listed in the order of appearance by removing element contents from the common data structure, in accordance with a correspondence between a position of the start markup tag or the end markup tag in said tag list and a position of the predetermined delimiter code detected by said delimiter code detecting unit.

IX. Evidence Appendix

(Not Applicable)

X. Related Proceedings Appendix

(Not Applicable)